



News Release

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Navy Communications Satellite Successfully Launched



F10 LAUNCH

A Lockheed Martin Atlas IIA rocket lifts off from Cape Canaveral Air Station at 11:09 p.m. Sunday. The rocket carried the U.S. Navy's 10th UHF Follow-On communications satellite into an intermediate transfer orbit. *Photo courtesy Lockheed Martin Commercial Launch Services.*

CAPE CANAVERAL AIR STATION, Fla. – The U.S. Navy's tenth UHF Follow-On Communications satellite was successfully launched into a sub-synchronous transfer orbit by an industry and government team here at 11:06 p.m. Eastern Standard Time.

Lighting up the late evening sky, the Atlas IIA launch vehicle, designated AC-136, climbed slowly at first from Lockheed Martin's newly renovated Launch Complex 36B, then accelerated quickly away from the Cape towards the southeast. The rocket appeared as bright light climbing into the nighttime sky as the thunderous roar from the engines shook the surrounding Brevard County area.

The Atlas rocket and Centaur upper stage pushed the Navy's 7,066-pound satellite into an intermediate transfer orbit of 14,186.644 nautical miles apogee, 154.797 nautical miles perigee and an inclination of 27.0053 degrees (based on the Centaur guidance system calculations). A team of Air Force, Navy and HSC flight controllers located at the Air Force's 3rd Space Operations Squadron at Schriever AFB, Colo., will begin a series of maneuvers over the next 10 days to move the satellite into geo-synchronous orbit and deploy the solar panels. The satellite will then undergo a series of on-orbit checks over Hawaii before being moved to its parking orbit over the Indian Ocean.

The F10 UHF Follow-On (UFO) Communications Satellite is the tenth of 10 scheduled Hughes Space and Communications Company (HSC) HS-601 models for the U.S. Defense Department. HSC contracted with Lockheed Martin Commercial Launch Services / International Launch Services (ILS) for the lift to orbit on Atlas I, Atlas II and Atlas IIA launch vehicles over the history of the program.

The Navy Communications Satellite Program Office (PMW 146) of the Space & Naval Warfare Systems Command (SPAWAR) in San Diego has overall responsibility for executing the procurement of the UHF communications satellites for all of the Defense Department. In July 1988, a fixed-price contract based on competition was awarded to Hughes Space and Communications Company to build the UFO satellite constellation and place it in orbit. The UFO contract is an innovative implementation of acquisition reform. The Navy issued contract performance objectives and goals, which allowed the contractor latitude in choosing commercial off-the-shelf components for the satellite and in selecting the commercial launch vehicle for lift to

orbit. The initial agreement called for Hughes to build and launch one satellite, with options for nine more, for a total value of \$1.9 billion.

On November 15th, SPAWAR announced a \$27,300,000 fixed price option modification to the original contract to purchase an 11th UHF Follow-On communications satellite from HSC. This modification contains 12 option Contract Line Item Numbers, which, if exercised, will bring the total cumulative value of the contract modification to \$213,286,790. Currently, F11 is scheduled to carry UHF and EHF communications capability.

The UHF Follow-On communications satellite constellation is used to satisfy the Department of Defense requirements for Ultra High Frequency (UHF), Extremely High Frequency (EHF), and Global Broadcast Service (GBS) communications, providing fleet broadcast to all Navy ships and command and control networks for selected aircraft, ships and submarines. Satellites in the geo-synchronous orbital constellation include Ultra High Frequency (F1-F10), Extremely High Frequency (F4-F10), Super High Frequency (F1-F7) and Global Broadcast Service (F8-F10) capability. Following the launch, the UHF Follow-On constellation will consist of eight modified 39-channel Hughes HS-601 satellites and one in-orbit spare.

UHF Follow-On communications satellites replace the TRW-built Fleet Satellite Communications (FltSatCom) and the Hughes-built Leased Satellite (LeaSat) spacecraft currently supporting the Navy's global communications network, serving ships at sea and a variety of other U.S. military fixed and mobile terminals. They are compatible with ground and sea-based terminals already in service.

The Space and Naval Warfare Systems Command awarded four contracts November 5, 1999 valued at \$700,000 each for Advanced Narrowband System / Mobile User Objective System concept studies. Awards for the concept studies were made to Hughes Space & Communications Company of Los Angeles, Lockheed Martin Missiles & Space of Sunnyvale, Calif., Raytheon Systems Company of St. Petersburg, Fla., and Spectrum Astro, Inc., of Gilbert, Ariz. Advanced narrowband communications technology and the Navy's Mobile User Objective System (MUOS) will replace the current Navy Fleet Satellite Communications (FLTSATCOM) satellites and Ultra High Frequency Follow-On (UFO) communications satellite constellation over the next two decades. The Navy's UHF communications satellite constellation currently provides narrowband tactical satellite communications to the Defense Department warfighter. The UHF Follow-On constellation, initially launched in 1993, will begin to reach the end of its design life early in the next century.

The UFO F10 satellite's solar array consists of two 34-foot solar wings that will generate at least 3,800 watts of power at the end of the spacecraft's service life. F10 is the third satellite to carry the high-capacity global broadcast service payload consisting of four 130-watt military Ka-band transponders with three steerable downlink spot beam antennas and one steerable and one fixed uplink antenna. This antenna modification results in a 96 mega-bits-per-second (Mbps) capability.

The satellites transmit to small, mobile, tactical terminals. UHF satellites F2 through F9 are on orbit and operational. UHF F1 is functional, yet in an orbit which makes it unusable for its original purpose because of a launch vehicle failure. Satellites F8, F9, and F10 carry a Global Broadcast Service Ka-Band payload. The GBS capability provides high-speed, wideband, simplex broadcast signals to the warfighter. This interim GBS package will revolutionize communications for the full range of the Defense Department's high-capacity requirements, from intelligence dissemination to quality-of-life programming.

The satellites are versions of the Hughes body-stabilized, three-axis HS 601 model. The spacecraft was introduced in 1987 to meet anticipated requirements for high-power, multiple-payload satellites for such applications as the UHF Follow-On, direct television broadcasting to very small terminals, private business networks, and mobile communications. Procurement of the commercially-produced satellite and communications systems helps the Defense Department meet its acquisition reform and commercial, off-the-shelf procurement goals.

For more information contact:

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